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TO:
Pat Regan - Regional Engineer
Office of Energy Projects - FERC
Division of Dam Safety and Inspection
Portland Regional Office
101 Southwest Main Street - Suite 905
Portland, Oregon 97204

SUBJECT:
October Monthly Report for the Falls Creek Hydro-electric Project
FERC # P-11659

DATE SUBMITTED:
11/20/06

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Dear Mr. Regan,

Please find enclosed the Monthly Construction Report for the Falls Creek Hydroelectric Project, FERC # P-11659.

Gustavus Electric Company (GEC), as the licensee for the above project, submits this report.

Sincerely,

Richard Levitt
GEC President

Contact Richard Levitt (richardlevitt@cs.com) to add names to distribution list.

Falls Creek Hydroelectric Project (P-11659)
MONTHLY CONSTRUCTION REPORT TO FERC
October 2006

1) Progress of Work

During the month of October, the final 100 feet of road was completed to the intake structure. Further work was done on the Intake Service Road to prepare for installation of the penstock. The service road to the powerhouse was completed this month.

The terminus of the Intake Service Road.

2) Status of Construction

The service road reached the intake site this month. Clay, muck and sloppy gravels up to 20 feet thick had to be removed and backhauled to the disposal site at the strip fen Y. This unstable material occurred below the creek bed at the impoundment site. More backhauling of this material will be done in November and December such that we are satisfied that the slope is stable above the road, parking/staging area and the impoundment structure.

Also in October, some drilling and shooting was done in the Blueberry Hill area. This was necessary because some previous shots did not loosen the rock deep enough for the penstock placement, and it was necessary to "daylight" the road cut ahead. This "daylighting" shot caused a slide, which reached Falls Creek. It is also described in detail in the ROC-ROR of 10-27-06 and in the Environmental Issues Section of this report.

The scene at the Blueberry Hill Road Cut immediately following the October 6th shot.

This month the road was also completed to the powerhouse. The last 300 feet of this road may be adjusted in the future to accommodate the final location and elevation of the powerhouse. The blasting required for this powerhouse road caused several slides of the steep slope above Falls Creek and another slide of overburden and shot rock into the creek from the powerhouse valley. These incidents are described in detail in the ROC-ROR of 10-27-06 and in the Environmental Issues Section of the report.

This picture was taken while standing at the approximate location of the future powerhouse - looking upstream and up the newly constructed powerhouse service road. The October 19th rock, mud and debris slide covers the stream just behind the small track hoe.

Work also continued on preparing the bed and trench for the HDPE penstock. GEC submitted to FERC a revised penstock plan for the upper portion of the HDPE Penstock. The penstock trench is being prepared according to the revised plan. Fusion of the HDPE Penstock is expected to start in mid November.

This picture was taken approximately half way up the Intake Service Road. Here, the first phase of the constructed road is being drilled, blasted and widened to better accommodate the plan to put the HDPE pipe on the creek side of the road.

3) Construction Difficulties

October is typically the rainiest month of the year. Precipitation this month was only slightly above normal, and although the ground was always saturated, precipitation caused no difficulties. During the last week of the month, temperatures dipped into the teens and 3 inches of snow fell. These conditions caused no additional difficulties. The concern of slides described earlier in this report and in the Record of Concern resulted in shooting much smaller charges than normally would have been done. Generally, drilling would occur during the morning and shooting and mucking during the afternoon. The drill was often moved between the powerhouse site and intake road area after each shot. This resulted in taking extra time to drill and shoot these areas than normally would be required.

5) Critical Events and Dates

On October 3rd, Ted Deats of the Alaska Department of Natural Resources visited the project to inspect the rock and gravel pits to see that they conformed to GEC's land use permit.

On October 4th, personnel from the Alaska Department of Fish and Game, the Alaska Department of Natural Resources-Habitat Division, and the U.S. Fish and Wildlife conducted an inspection of the project.

On October 6th, a shot at the upper end of the Blueberry Hill Road Cut resulted in a slide which reached the creek.

Drilling continued on the powerhouse road on October 9th and a slide occurred on October 12th. Drilling and shooting alternated between the powerhouse area and the intake area, with a large slide occurring October 19th in the powerhouse area and a small slide occurring at the intake area on October 22nd.

Jackie Timothy of the Alaska Department of Natural Resources visited the project on October 24th to gain first-hand knowledge of the October slides and discuss mitigation.

Dick Levitt meeting with agency personnel at the future impoundment site. Turbidity "naturally" high on this rainy day.

8) Sources of Major Construction Material

Material for construction of the road to the intake and for penstock foundation was shot rock from the Blueberry Hill road cut area. Material for continuing the powerhouse road was shot rock from the road cut in the powerhouse area.

11) Photographs

Ten photo vantage points have been established throughout the project area. See Figure 1 for photo site locations and Appendix 1 for this month's photos.

12) Environmental Compliance Issues

Monitoring of turbidity in Falls Creek has been ongoing through the month of October. Daily sampling has occurred at the Powerhouse Site, at the Horse Shoe Ridge area and upstream of construction activities. A peak of 87 NTUs was recorded at the powerhouse site on the morning of October 4th. This sample was taken prior to the official sample time of 3:00 p.m. in order to provide the construction superintendent a "heads up' reading and advice for bringing turbidity down before the 3:00 p.m. sample. The superintendent took action soon after being informed of the high turbidity reading and was able to control sedimentation such that the official reading at 3:00 p.m. was down to 30 NTUs. When conditions warrant, the "heads up" approach is used to insure that adequate time is available for addressing turbity sources during short winter days.The only other high reading (36 NTUs) for this month occurred on October 6th following the slide at the Blueberry Hill Road Cut. All other readings for this month were 10 NTUs or less.

High turbidity due to a combination of on site construction and flood stage conditions.

"Lifting" of the road through the Horse Shoe Ridge Cut greatly improved sediment control here. New road surface is at approximate elevation of the bottom of the penstock ditch.

Other than the slides created this month by construction activities, most earth-work in general has resulted in little increase in stream turbidity. The situation at the horse shoe ridge was dramatically improved over last month when the road was lifted approximately 8 feet. This provided increased catchment on the uphill side of the road with a deep ditch and removed most of the potential for road runoff to transport sediments to the slopes and creek below.

A few silt sources continued to slightly increase turbidity along the Intake Service Road (~ + 5-10 NTUs). Proper ditching and culverting of the final road should easily control most sources. The obvious exception is the intake site. The current plan calls for several thousand yards of excavation work immediately above the intake site. This slope appears to be overlain by deep layers of lodgement till and weathered clays. Blasting is also scheduled for this area. Geotechnical surveys and specific engineering and construction plans designed to address long-term slope stability and erosion issues are important to address Environmental concern here.

This is the location of the future impoundment site. Additional cutting and blasting of the slope is scheduled to prep the site for impoundment construction. Note the weeping clays coming off the slopes and seeping through the road into the creek.

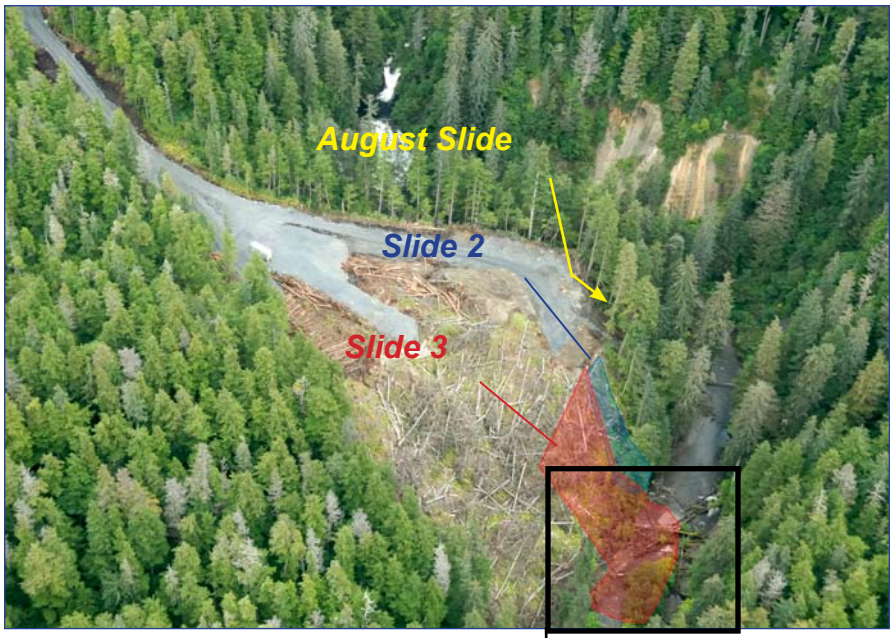
The construction site was visited by a group of ADF&G, DNR and USFWS personnel on October 4th. The creek was at flood stage on the day of the visit and provided an excellent opportunity for on-site observations of “worst case scenario” sediment and erosion control circumstances.

The spoils area at the Strip Fen Y, though added to considerably during October, did not increase in surface area and appears to have stabilized.

Blasting this month resulted in 4 slides into Falls Creek. The first slide occurred on October 6th and the fourth slide occurred on October 22nd. The slides have had minimal-moderate immediate impacts on fish habitat, however, slope instability and the threat of further mass wasting is a serious concern in all areas, including blasting areas scheduled for the near future. Two of the slides at the powerhouse area had direct impacts to anadromous fish habitat that may necessitate mitigation. Each of the 4 slides occurred as a result of bedrock blasting for service road construction along the steep slopes of the Falls Creek Canyon. For further details please refer to the Record of Concern submitted to FERC on October 27.

The October slides have served to heighten our awareness of slope instability along the Falls Creek canyon, especially in the vicinity of the powerhouse and anadromous reaches. In light of this information the ECM and project Manager are consulting with DNR and ADF&G personnel on a plan that would include mitigation of damaged habitat for slides to date, as well as possible changes to the tailrace design. A change in the tailrace design would necessitate a ***modification of the Final Environmental Design Plan***. A plan for mitigation of current and potential future impacts to fish habitat and slope stability will be drafted by December and a meeting scheduled with all relevant agencies as soon as possible so that adequate time for feedback and approval

Profile view of the powerhouse service road. Although a small slide existed here prior to blasting, most of the material slid following blasting of the road cut - four constructed related slides in total here.



Above - Figure 4.0 from the October 27 Record of Concern: Aerial view of the powerhouse area that shows the August slide and the locations impacted by slide 2 and slide 3.

Right - crop of above showing that a primary channel was covered by the slide, including potential spawning gravels.

of possible design plan modifications is allotted before the spring thaw. At this meeting we will also discuss options for slope stabilization efforts in the vicinity of all existing slides. Though slope stabilization should occur as soon as possible, the best time to conduct in-stream mitigation will be between fry emergence and spawning activity (June and July). .

Just up stream of the Horse Shoe Cut the Intake Service Road becomes 1.5 "lanes". The lower road is the bed for the penstock, the upper road is for the service road.

As mentioned earlier in the report, a plan revision for moving the penstock to the downhill side of the road was submitted in October. Initial site preparations of the new penstock alignment began mid-month resulting in second road being constructed along some stretches of the intake road. Blasting for widening and lowering existing intake road lengths along very steep slopes began as well. Although it is believed that the overall impacts of the new penstock plan will be considerably less than the original plan there remains some significant engineering and design challenges, especially along the steeper slopes. In addition to obvious environmental challenges of blasting and excavating at the creek bank, along steeper slopes it will be important that creek side bedding of the penstock is done in a manner that insures long-term stability during normal erosion and flood events.

A marbled murrelet tree identified as impacted in the July 12 Non-conformance report was excavated in October. Though the tree suffered scarring during the filling and excavation it is likely that it will survive the impact of being buried in fill for 3 months if roots have not been damaged.

Potential Marbled Murrelet tree that had been buried during road construction in July was excavated this month in fulfillment of a commitment made in a Non-conformance report.

13) Wildlife Activity

Wildlife activity was generally low during October with the possible exception of increased moose traffic. Colder temperatures during the latter part of the month may have compelled the moose to range further in search of higher quality fall and winter habitats. No bear activity was observed in the anadromous reach.

Moose sighted crossing Falls Creek along the Intake Service road.

14) Biotic Monitoring

Four foot count surveys were conducted for monitoring salmon abundance in the anadromous reach. Very few pinks or chums were observed this month (2 and 0 respectively). Of note, the cohos began running in earnest during the first week of the month with a peak number observed of 37 at mid-month.

It was necessary to remove the transducer from the stream at the end of the month. The revised penstock plan for the Intake Service Road necessitated additional blasting and cutting near the creek banks and the instrument was at high risk of destruction. The transducer will be reinstalled as soon as possible.

The following sections are not yet applicable to the date of this report:

4) Contract Status
6) Reservoir Filling
7) Foundations
9) Materials Testing and Results
10) Instrumentation

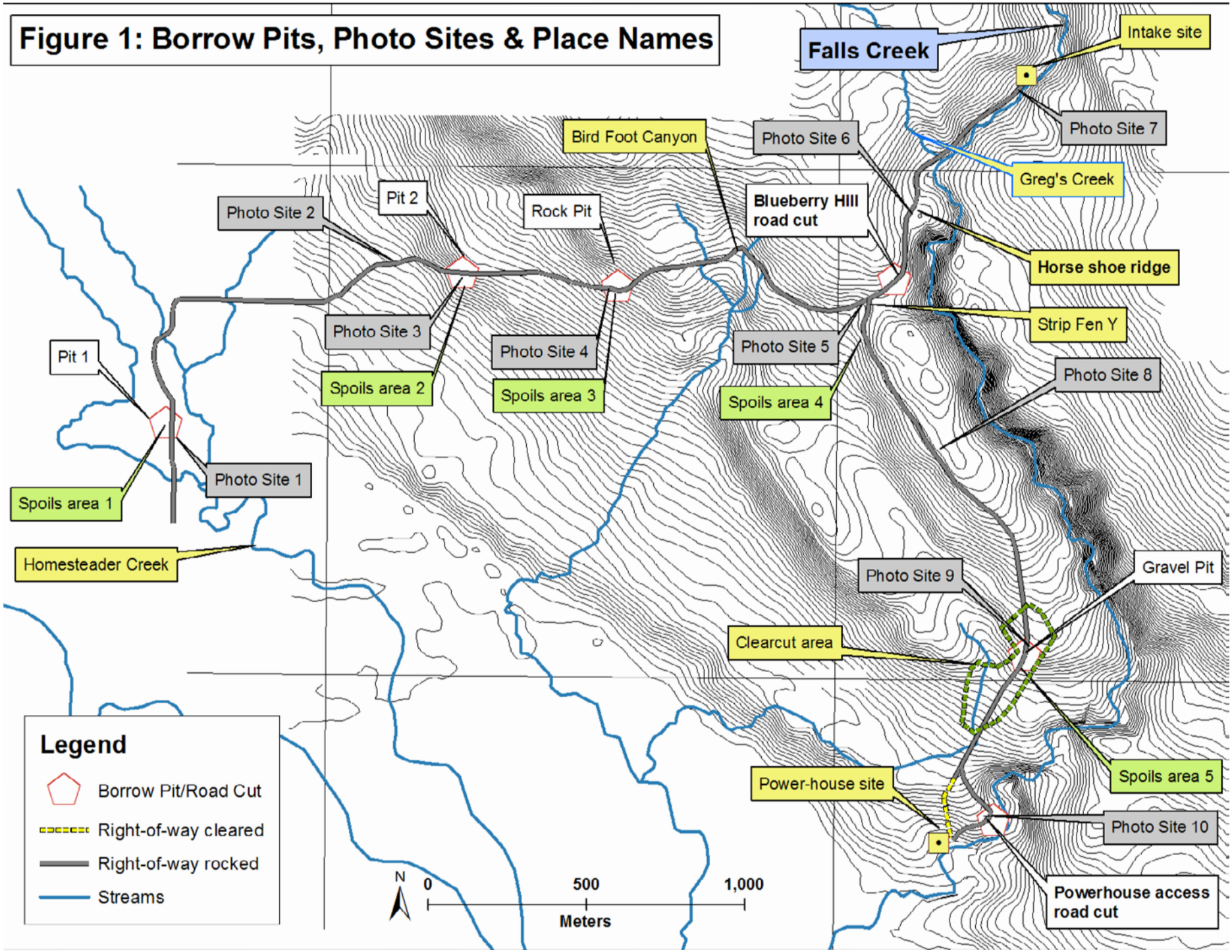


Figure 1: Borrow Pits, Photo Sites & Place Names
Falls Creek
Intake site
Photo Site 7
Greg's Creek
Photo Site 6
Bird Foot Canyon
Blueberry Hill road cut
Horse shoe ridge
Strip Fen Y
Photo Site 8
Photo Site 5
Spoils area 4
Photo Site 4
Spoils area 3
Rock Pit
Pit 2
Photo Site 2
Photo Site 3
Spoils area 2
Pit 1
Photo Site 1
Spoils area 1
Homesteader Creek
Photo Site 9
Gravel Pit
Clearcut area
Spoils area 5
Power-house site
Photo Site 10
Powerhouse access road cut
Legend
Borrow Pit/Road Cut
Right-of-way cleared
Right-of-way rocked
Streams
N
0
500
1,000
Meters

APPENDIX 1: AUGUST PHOTOS FROM VANTAGE POINTS

01_photo_site.jpg

02_photo_site.jpg

03_photo_site.jpg

04_photo_site.jpg

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09_photo_site.jpg

10_photo_site.jpg

Previous report photo (10) indicating
photo location for this month's shot.